Air Quality Permitting
Technical Memorandum

March 20, 2003

Tier II Operating Permit and Permit to Construct
No. T2-030404

Holcim (US) Inc.
Bliss, Idaho

AIRS Facility No. 047-00013

Prepared by:

Harbi Elshafei
Permit Writer

Air Quality Division

FINAL REVISED PERMIT

TABLE OF CONTENTS

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AIRS	Aerometric Information Retrieval System
CO	carbon monoxide
DEQ	Department of Environmental Quality
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
MACT	Maximum Achievable Control Technologies
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
PM_{10}	particulate matter with an aerodynamic diameter of 10 micrometers or less
PSD	Prevention of Significant Deterioration
PT	particulate matter
SIC	Standard Industrial Classification
SM	synthetic minor
SO_2	Sulfur Dioxide
THAP	Total Hazardous Air Pollutants
VOC	Volatile Organic Compound

1. PURPOSE

The purpose for this technical analysis is to satisfy the requirements of IDAPA 58.01.01, Section 404 et seq. and 200 et seq., *Rules for the Control of Air Pollution in Idaho* (*Rules*).

On February 20, 2003, the Department of Environmental Quality (DEQ) received a submittal from Holcim (US) Inc. (Holcim) requesting that DEQ revise Permit Conditions 3.2 and 3.4 and change the mailing address in the facility's December 11, 2002 Tier II operating permit and permit to construct. Additionally, Holcim requests that DEQ verify the source of the emission factors used to calculate the emission rates for lead, phosphorous, and nickel. For reference, Holcim's February 20, 2003 submittal is included as Appendix A of this document.

This memorandum serves as an addendum to DEQ's December 2, 2002 technical memorandum which supports the December 11th permit. For reference, the December 2, 2002 technical memorandum is included as Appendix B.

2. SUMMARY OF EVENTS

December 11, 2002	DEQ issued a final Tier II Operating Permit and Permit to Construct No. 047-00013 for Holcim
February 20, 2003	Holcim submitted a request to DEQ to revise Tier II Operating Permit and Permit to Construct No. 047-00013

3. TECHNICAL ANALYSIS

Permit Revisions

This project is to revise the following:

a) In the permit cover page, SIC code is changed to 5032.

b) On the permit cover page, the new mailing address is: P.O. Box 86, Bliss, Idaho 83314.

c) Permit Condition 3.2, page 8 is changed to read as follows: "The collapsible boot and enclosed screw conveyor eliminate fugitive emissions while unloading Portland cement from the railcars. Dust is generated as the Portland cement is unloaded into the storage silos, and the dust is captured by a baghouse filter."

d) Permit Condition 3.4, page 8 is changed to read as follows: "The permittee shall operate and maintain the baghouse filter (EU-01) at all times that material is unloaded from railcars to the storage silos."

The above revisions to the permit do not result in increases of any emissions; therefore, the revised permit does not required public notice or a public comment period. As requested, DEQ has provided the reference for the emission factors used to estimate lead, phosphorous, and nickel emissions. That reference is provided in Appendix B of this document.

Facility Classification

The facility is not a major facility as defined by IDAPA 58.01.01.006.55 because the permit contains federally enforceable conditions that the facility's potential to emit to less than major source threshold levels. The facility is not a designated facility as defined in IDAPA 58.01.01.006.27. The AIRS facility classification is SM. The facility is not subject to federal NSPS, NESHAP, or MACT requirements in accordance with 40 CRF 60, 61, and 63, respectively. This facility is a Portland cement transfer facility, SIC code 5032.

4. AIRS INFORMATION

AIRS/AFS FACILITY-WIDE CLASSIFICATION[a] DATA ENTRY FORM

AIR PROGRAM / POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	TITLE V	AREA CLASSIFICATION A – Attainment U – Unclassifiable N – Nonattainment
SO_2	B						U
NO_X	B						U
CO	B						U
PM_{10}	SM					SM	U
PT	SM					SM	
VOC	B						U
THAP (Total HAPs)							
			APPLICABLE SUBPART				

[a] AIRS/AFS CLASSIFICATION CODES:

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class "A" is applied to each pollutant which is below the 10 ton-per-year (T/yr) threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.
- SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B = Actual and potential emissions below all applicable major source thresholds.
- C = Class is unknown.
- ND = Major source thresholds are not defined (e.g., radionuclides).

5. FEES

No Tier II operating permit processing fees are required, in accordance with IDAPA 58.01.01.407.02.b.

6. RECOMMENDATIONS

Based on the review of the application materials, and all applicable state and federal regulations, staff recommends that DEQ issue revised Tier II Operating Permit and Permit to Construct No. T2-030404 to Holcim (US) Inc. No public comment period is recommended, no entity has requested a comment period, and the project does not involve PSD requirements.

BR/HE/sd T2-030404 G:\AIR QUALITY\STATIONARY SOURCE\SS LTD\T2\HOLCIM\T2-030404\T2-030404 FINAL TM.DOC

APPENDIX A

Holcim (US) Inc, Bliss

Project No. T2-030404 (Permit application)

T2-030404

Environmental Affairs Department

Holcim (US) Inc.
6211 Ann Arbor Road
P.O. Box 122
Dundee, MI 48131

Phone 734 529 4213
www.holcim.com/us

February 10, 2003

Mr. Stephen VanZandt, MS, EHS
State of Idaho
Division of Environmental Quality
601 Pole Line Rd, Suite 2
Twin Falls, ID 83301-3035

RE: Holcim (US) Bliss Terminal
Permit 047-00013 – Request for Revisions

Dear Mr. VanZandt:

Thank you for taking the time to meet with Jim Donaldson, terminal manager, and myself last Thursday to discuss the recently issued Tier II Operating Permit for our terminal located in Bliss, Idaho.

At this time, Holcim (US), Inc., (Holcim) is requesting the following minor changes to the Operating Permit.

The following comments were originally submitted on September 3, 2002 by Paul Detterline:

1. An emission rate of 3.62E-05 lb/hr lead, based on AP42 Table 11.12-6, was used in the permit application (table 3-3). A different rate is listed in Table 5.1 (5.4E-5 lb/hr). Please provide a reference for the factor used in the draft permit.
2. Appendix A, TAP Analysis Table 1 lists a phosphorous emission rate of 5.56E-10 lb/hour. Please provide a reference for the factor used in the draft permit.
3. Appendix A Table 2 for Truck Loading lists an emission rate of 5.95E-06 for nickel. Appendix C for Truck Loading in the permit application lists an emission rate of 5.95E-07.

Further, as we discussed during our meeting, Holcim is requesting the following additional revisions:

4. The SIC code stated in the permit is 4214. The correct SIC code for a cement terminal is 5032. Please change the SIC code to 5032.

05416

Holcim

5. Holcim is requesting that all correspondence be sent directly to the terminal. Therefore the mailing address should be changed to PO Box 86, Bliss, Idaho 83314.
6. Condition 3.2 – Holcim is requesting the following revision to clarify this condition. (Removed text is struck through and added text is underlined):

   " The collapsible boot and enclosed screw conveyor eliminate fugitive emissions while unloading Portland cement from the railcars. Dust is generated as the Portland cement is unloaded into the storage silos, and the dust ~~is discharged to the atmosphere through~~ is captured by a baghouse filter."

7. Condition 3.4 – Holcim is requesting the following revision to clarify this condition as the baghouse is only operated during unloading operations. (Removed text is struck through and added text is underlined):

   "The permittee shall operate and maintain the baghouse filter (EU-01) at all times that material is unloaded from railcars to the storage silos~~, and at all times material is stored in the storage silos~~."

Holcim appreciates the opportunity to meet with you and we look forward to working with you. If you have any questions regarding this submittal, please do not hesitate to contact me at 734.529.4213.

Sincerely,

Rashila Tong

Rashila Tong, P.E.
Environmental Specialist

cc: J. Donaldson

APPENDIX B

Holcim (US) Inc, Bliss

Emission Factors Verifications
From DEQ's Technical Services Division

December 2, 2002 Technical Memorandum

Air Quality Permitting
Technical Memorandum

December 2, 2002

Tier II Operating Permit and Permit to Construct No. 047-00013

Holcim (US) Inc., Bliss, Idaho
Portland Cement Transfer Facility

Project No. T2-020406

Prepared By:

Michael Stambulis, P.E., Staff Engineer
State Office of Technical Services

FINAL PERMIT

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EPA	U.S. Environmental Protection Agency
gr	grain (1 lb = 7,000 grains)
HAP	Hazardous air pollutant
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometer
lb/hr	pound per hour
MACT	Maximum Available Control Technology
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
O_3	ozone
O&M	operation and maintenance (manual)
Pb	lead
PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to contruct
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SM	Synthetic Minor
SO_2	sulfur dioxide
SO_x	sulfur oxides
TAP	toxic air pollutant
T/yr	tons per year
$\mu g/m^3$	micrograms per cubic meter
VOC	volatile organic compound

5. TECHNICAL ANALYSIS

5.1 EMISSIONS ESTIMATES

Facility operations produce emissions from material handling activities including rail car unloading, truck loading, and vehicle travel on unpaved roads. Emissions generated while unloading Portland cement from rail cars are collected and exhausted through baghouse filter EU-01. Emissions generated while loading Portland cement into trucks are collected and exhausted through baghouse filter EU-02. Baghouse stack parameters are listed below.

Stack EU-01		Stack EU-02	
Manufacturer:	DCL	Manufacturer:	Midwest
Maximum Air Flow:	600 acfm	Maximum Air Flow:	1,500 acfm
Stack Diameter:	5.75" x 5.75" (square)	Stack Diameter:	7.5"
Stack Height:	77.5'	Stack Height:	33.7'
Exhaust Temperature:	Ambient	Exhaust Temperature:	Ambient

The dust collection system used during rail car unloading includes a collapsible boot that covers the rail car and a covered screw auger that conveys the Portland cement directly to the storage silo bin. During truck loading, baghouse filter EU-02 is positioned directly above the spout that delivers the Portland cement to the trucks. A 1,500-acfm exhaust fan associated with EU-02 collects dust generated while loading trucks. The dust collection efficiencies of both rail car unloading and truck loading are assumed to be 100%.

Holcim obtained a manufacturer's guaranteed outlet loading of 0.05 gr/dscf for EU-01 from DCL. Holcim was unable to obtain similar information for EU-02; however, the outlet loading for EU-02 is assumed to be 0.05 gr/dscf. A reasonable emission factor for a well-designed and operated baghouse is 0.01 gr/dscf.[1] All PM emissions are assumed to be PM_{10}. This represents a worse case scenario. A summary of potential emissions is presented in Table 5.1.

Table 5.1. CONTROLLED MAXIMUM POTENTIAL CRITERIA POLLUTANT EMISSIONS

Source Description	Potential Emissions - Hourly (lb/hr), and Annual[b] (T/yr)					
	PM		PM_{10}		Pb	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Rail Car Unloading (EU-01)	0.26	1.13	0.26	1.13	2.2E-06	3.8E-06
Truck Loading (EU-02)	0.64	2.82	0.64	2.82	5.4E-05	6.3E-05
Travel on Unpaved Roads	0.24	1.00	0.13	0.55	0	0
TOTAL	1.14	4.95	1.03	4.50	5.6E-05	6.7E-05

[a] As determined by a pollutant-specific U.S. EPA reference method, a DEQ-approved alternative, or as determined by the DEQ's emissions estimation methods used in this permit analysis.

[b] As determined by multiplying the actual or allowable (if actual is not available) pound-per-hour emissions rate by the allowable hours per year that the process(es) may operate(s), or by actual annual production rates.

The facility emits TAPs during material transfer operations. Calculations of hourly and annual TAP emissions are presented in Appendix A.

[1] Anthony J. Buonicore and Wayne T. Davis, *Air Pollution Engineering Manual*, (New York: Van Nostrand Reinhold, 1992), 115.

The permittee is required to conduct a monthly facility-wide inspection of visible emissions/opacity sources. Potential visible emissions sources include the two baghouse filter stacks. In accordance with Permit Condition 2.7, the permittee shall not discharge any air pollutant to the atmosphere from any point of emission for a period or periods aggregating more than three minutes in any 60-minute period that is greater than 20% opacity. The monthly inspections will aid the facility in determining whether PM collection and filter systems are functioning properly.

5.3.3 Storage Silo Bin Vent

5.3.3.1 Operational Limit - (Permit Condition 3.3)

The maximum annual amount of Portland cement transferred from rail cars to the storage silos shall not exceed 700,000 tons per any consecutive 12-month period. The annual throughput limit is required to ensure annual ambient impacts from emissions of PM_{10} comply with the NAAQS.

Hourly emissions estimates were based on cement throughputs of 300 tons per hour. The facility cannot achieve this production rate with its current configuration and equipment. Modeling indicated ambient impacts at this throughput were less than the 24-hour NAAQS for PM_{10}. Therefore, an hourly or daily cement throughput limit was not required for the facility.

Compliance Demonstration

The permittee is required to monitor and record the transfer of Portland cement from rail cars to the storage silos each month and for the previous consecutive 12-month period.

5.3.3.2 Operational Limits - (Permit Condition 3.4)

The permittee is required to operate and maintain a baghouse filter (EU-01) when material is transferred to or from the storage silos and when material is stored in the silos. The permittee calculated PM and PM_{10} emissions rates based on a conservative outlet loading from the baghouse stack of 0.05 gr/dscf. At this emission rate, PM and PM_{10} emissions are each less than 100 tons per year. Uncontrolled operations would result in PM and PM_{10} greater than 100 tons per year. Baghouse operation is required to ensure ambient impacts from PM_{10} emissions do not exceed NAAQs and to limit PM and PM_{10} emissions to below major facility threshold emissions.

The permittee is required to monitor the pressure drop across the baghouse to ensure the pressure drop is maintained within manufacturer and O&M manual specifications. Pressure drop is an indicator of baghouse efficiency and is monitored to ensure proper baghouse operation.

Compliance Demonstration

The facility is required to develop an O&M manual for baghouse operation within 90 days of permit issuance (Permit Condition 3.5).

On a monthly basis, the permittee is required to monitor and record the pressure drop across the baghouse while material is transferred from rail cars to storage silos (Permit Condition 3.7).

6. AIRS

AIRS/AFS FACILITY-WIDE CLASSIFICATION DATA ENTRY FORM

AIR PROGRAM / POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	TITLE V	AREA CLASSIFICATION A – Attainment U – Unclassifiable N – Nonattainment
SO_2	B						U
NO_x	B						U
CO	B						U
PM_{10}	SM	SM					U
PT (Particulate)	SM	SM					
VOC	B						U
THAP (Total HAPs)	B						
			APPLICABLE SUBPART				

AIRS/AFS Classification Codes:

A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class "A" is applied to each pollutant which is below the 10 T/yr threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.

SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.

B = Actual and potential emissions below all applicable major source thresholds.

C = Class is unknown.

ND = Major source thresholds are not defined (e.g., radionuclides).

6. TIER II FEES

Fees apply to this facility in accordance with IDAPA 58.01.01.407. The facility is a synthetic minor source; therefore, a fee of $10,000 will be assessed to the facility upon issuance of the Tier II/PTC.

7. RECOMMENDATIONS

Based on the review of the application materials, and all applicable state and federal regulations, staff recommends that DEQ issue a Tier II Operating Permit and Permit to Construct to Holcim (US) Inc. An opportunity for public comment on the air quality aspects of the proposed operating permit shall be provided in accordance with IDAPA 58.01.01.404.01.c. The permit will be issued upon receipt of the fee.

MJS/sm T2-020406 G:\Air Quality\Stationary Source\Ss Ltd\T2\Holcim\Final\T2-020406 Final Tm.Doc

CC: Stephen VanZandt, Twin Falls Regional Office

APPENDIX A

TAP Emissions Estimates

APPENDIX A
TAP ANALYSIS - TRUCK LOADING

Table 1. Non-carcinogenic Toxic Air Pollutants

Toxic Air Pollutant	Controlled Emissions Factors - Truck Loading (lb/ton material)	Emissions - Truck Loading (lb/hour)	Annual Emissions - Truck Unloading (ton/yr)	Facility-Wide Total Hourly Emissions
Chromium Metal (total)	5.70E-07	1.71E-04	2.00E-04	1.8E-04
Manganese	3.06E-06	9.18E-04	1.07E-03	9.41E-04
Phosphorous	1.92E-06	5.76E-04	6.72E-04	6.E-04
Portland Cement	Not Applicable	6.43E-01	2.81634	9.00E-01
Selenium	1.31E-07	3.93E-05	4.59E-05	3.9E-05

Table 2. Carcinogenic Toxic Air Pollutants

Toxic Air Pollutant	Controlled Emissions Factors - Truck Loading (lb/ton material)	Emissions - Truck Loading (lb/hour)	Annual Emissions - Truck Unloading (ton/yr)	Facility-Wide Total Hourly Emissions
Arsenic	1.52E-07	4.56E-05	5.32E-05	4.6E-05
Beryllium	1.22E-08	3.66E-06	4.27E-06	3.8E-06
Cadmium	1.71E-09	5.13E-07	5.99E-07	6.1E-07
Nickel	5.95E-06	1.79E-03	2.08E-03	1.8E-03

Notes: Hourly emissions based on 300 tons per hour throughput.
Annual emissions based on 700,000 tons per cosecutive 12-month period throughput.

APPENDIX B

Modeling Memorandum

Table 1. Applicable Regulatory Limits

Pollutant	Averaging Period	Regulatory Limit[a] ($\mu g/m^3$)[b]	Modeled Value Used[c]
Nitrogen Dioxide (NO_2)	Annual	100[d]	Maximum 1st highest[e]
Sulfur Dioxide (SO_2)	3-hour	1,300[f]	Maximum 2nd highest[e]
	24-hour	365[f]	Maximum 2nd highest[e]
	Annual	80[d]	Maximum 1st highest[e]
Carbon Monoxide (CO)	1-hour	40,000[f]	Maximum 2nd highest[e]
	8-hour	10,000[f]	Maximum 2nd highest[e]
PM_{10}	24-hour	150[f]	Maximum 6th highest[e]
	Annual	50[d]	Maximum 1st highest[e]
Lead (Pb)	Quarterly	1.5[d]	1 Maximum 1st highest[e]

a. IDAPA 58.01.01.577
b. Micrograms per cubic meter
c. When using five years of meteorological data
d. Not to be exceeded
e. At any modeled receptor
f. Not to be exceeded more than once per year
g. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers

An ambient air assessment of TAP impacts was not performed for the facility to demonstrate compliance with IDAPA 58.01.01.161. DEQ determined that the magnitude and nature of TAP emissions and the distance of the facility from the potential offsite public adequately demonstrated compliance with IDAPA 58.01.01.161.

2.3 Background Concentrations

Applicable background concentrations are shown in Table 2. Statewide background concentrations used for the Holcim Tier II operating permit application were provided by DEQ to Trinity.

Table 2. Background Concentrations

Pollutant	Averaging Period	Background Concentration ($\mu g/m^3$)[a]
PM_{10}	24-hour	86
	Annual	33
Pb	Quarterly	not available

a. Micrograms per cubic meter

2.4 Modeling Impact Assessment

The ambient air impact analysis was performed by Trinity using the model ISC-PRIME - Version 99020. A modeling protocol was submitted to and approved by DEQ prior to Holcim's submission of the Tier II operating permit application. DEQ conducted verification modeling using ISC-PRIME - Version 99020; Table 3 provides a summary of the modeling parameters used for the DEQ analysis. Trinity originally used a receptor grid of 50-meter spacing out to 1,500 meters from the emission source, and a coarse grid of 500-meter spacing out to 5,000 meters from the source. DEQ refined this grid during model verification to the values specified in Table 3. This adjustment was made to provide greater assurance that areas of maximum concentration were identified. Typically, a minimum grid spacing of 25 meters is used for dispersion modeling. The 5-meter spacing along the facility boundary was used for Holcim because the close proximity of the emissions source to ambient air and the plume downwash caused by the presence of the silos resulted in a strong concentration gradient. The maximum modeled concentration could have been missed by a more coarse receptor grid. Figure 1 shows the revised receptor grid used for the modeling analysis.

Table 4. Emission Quantities

Source	Maximum Hourly Emissions Rate[a] pounds per hour (lb/hr)		Annual Emissions Rate[b] tons per year (t/yr)	
Pollutant	**PM_{10}**	**Pb[c]**	**PM_{10}**	**Pb**
Silo Bin Vent Collector (EU-01)	0.10	8.7E-7	0.12	3.8 E-6
Truck Loading (EU-02)	0.10	1.45E-5	0.12	6.3 E-5

a. Emission rate used for 24-hour averaging periods
b. Emission rate used for annual averaging period
c. Average hourly emission rate

Table 5. Emissions and Stack Parameters

Source / Location	Source Type	Stack Height (m)[a]	Stack Diameter (m)	Stack Gas Temp. (K)[b]	Stack Gas Flow Velocity (m/sec)
Silo Bin Vent Collector (EU-01)	Point	23.6	0.29	297	0.001[c]
Truck Loading (EU-02)	Point	10.3	0.19	297	0.001[c]

a. Meters
b. Kelvin
c. 0.001 m/sec used because of the presence of a rain cap over the stack

Building and tank dimensions provided in the building profile input program (BPIP) file were compared against the scaled plot plan and the effect of buildings and tanks on plume downwash was included in the analysis.

A significant impact analysis was initially performed to determine if emissions from the facility would "significantly contribute" to pollutant concentrations in ambient air, as per IDAPA 58.01.01.006.93. A full impact analysis was then performed for those pollutants emitted from the facility that were estimated to have an ambient impact exceeding "significant contribution" levels. The full impact analysis involved modeling impacts from the facility's emissions and adding those impacts to background concentrations. There is no significant impact level for lead and background ambient lead concentrations are not available. As a screening level, a significant contribution level equal to the 1.5 $\mu g/m^3$ standard, identified in Table 1, divided by 100 (0.015 $\mu g/m^3$) was used.

3. MODELING RESULTS:

Modeled ambient air impact results from the significant impact analysis are provided in Table 6 for facility-wide emissions. A monthly averaging time period was conservatively used for lead. The values reported in this memorandum were obtained from DEQ verification modeling. Because the potential ambient impact of the facility-wide emissions exceeds "significant contribution" levels for annual PM_{10} and 24-hour PM_{10}, a full impact analysis was performed for those pollutants and averaging times.

Table 6. Significant Impact Analysis for Criteria Pollutants (Facility-wide Emissions)

Pollutant	Averaging Period	Ambient concentration ($\mu g/m^3$)	Significant Contribution[a] ($\mu g/m^3$)	Full Impact Analysis Required (Y or N)
PM_{10}	24-hour	28[b]	5.0	Y
	Annual	7.0[b]	1.0	Y
Pb	Monthly	0.0014[b]	NA	N

a. Significant contribution level as per IDAPA 58.01.01.006.93
b. 1st highest modeled value

Figure 1 - Holcim Tier II Operating Permit Ambient Air Impacts

Ambient Air Receptor Grid

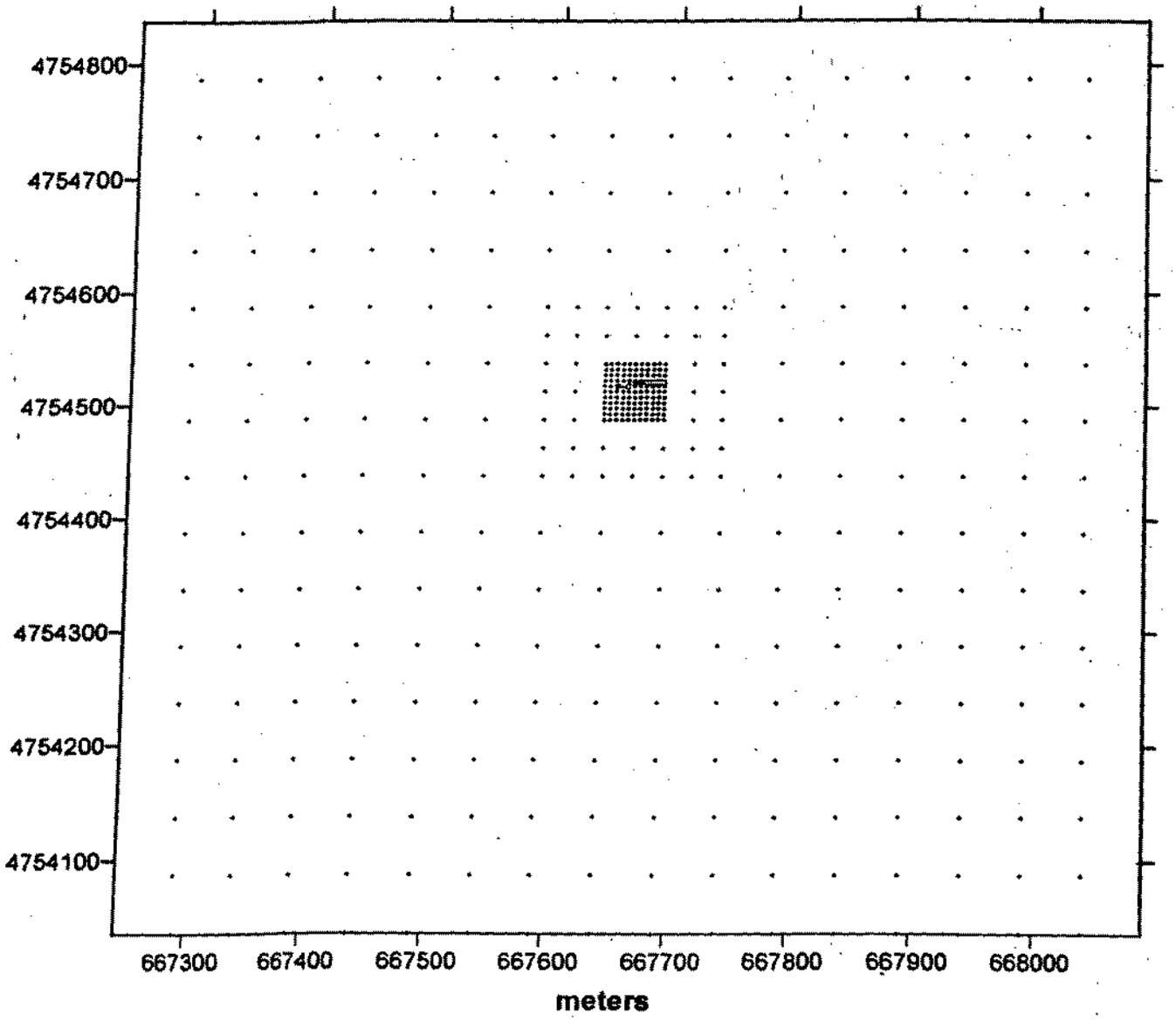
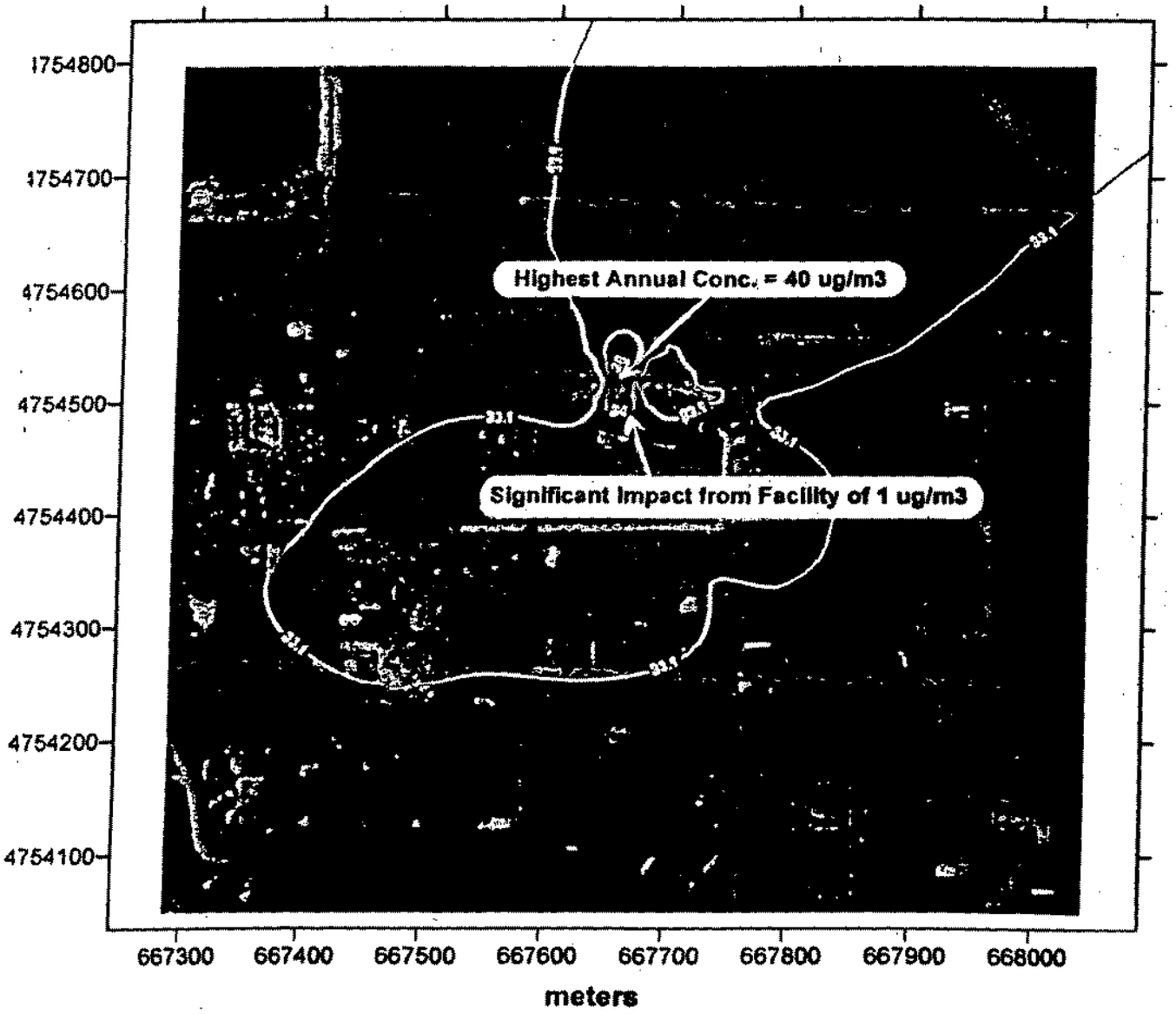


Figure 3 - Holcim Tier II Operating Permit Ambient Air Impacts

Highest Annual PM-10 Impact (Including Background of 33 ug/m3)



March 18, 2003

MEMORANDUM

TO: Harbi Elshafei
Permit Writer
Stationary Source Program

FROM: Michael Stambulis, P.E.
Staff Engineer, Process Engineering Group
State Office of Technical Services

SUBJECT: Response to Facility Comments Submitted on February 10, 2003
Holcim (US) Inc. Tier II Operating Permit Number 047-00013

The permittee requested clarification regarding three emissions factors used in developing the Tier II operating permit issued to Holcim (US) Inc. (Holcim) on December 11, 2002 (Permit Number 047-00013). This memorandum explains the derivation of the emissions factors.

Comment 1: The permittee requested a reference for the hourly emission factor used for lead emissions generated during truck unloading. Table 11.12-6 of the Environmental Protection Agency's Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, October 2001, Volume I: *Stationary Point and Area Sources* (AP-42) lists the uncontrolled emission factor for lead during truck loading as 3.62E-06 pounds per ton of material loaded.

Holcim's permit application was received by the Idaho Department of Environmental Quality (Department) on May 8, 2002 and declared complete by the Department on June 7, 2002. On Page 3 of the forms submitted in Appendix D of the permit application, the normal maximum feed input and maximum rated capacity for loading portland cement from storage silos to trucks are both listed as 300 tons per hour. The efficiency of the fabric filter system is assumed to be 95%. Therefore, the maximum hourly throughput of lead was calculated as:

3.62E-06 pounds per ton material loaded * 300 tons per hour * 5% emitted =
5.4E-05 pounds per hour

Table 5.1 of the referenced permit lists the hourly emission factor for lead during truck unloading as 5.4E-05 pounds per hour.

Comment 2: The permittee requested a reference for the hourly emission factors used for phosphorous. Table 11.12-6 of AP-42 lists ND (no data) for controlled emissions of phosphorous during cement silo filling. However, footnote b of Table 11.12-6 states, *"Although controlled emissions of phosphorous compounds were below detection, it is reasonable to assume that the effectiveness is comparable to the average effectiveness (98%) for the other metals."* The uncontrolled emission factor for phosphorous is listed as 1.18E-05 pounds per ton of material loaded; therefore, the controlled emission factor is 2.36E-07 pounds per ton of material loaded. Holcim's permit application indicated the maximum rated input capacity of material from railcars to the storage silos is 200 tons portland cement per hour. A conservative estimate of hourly emissions of phosphorous was calculated as:

1.18E-05 pounds per ton material * 200 tons per hour * 2% emitted =
4.7E-05 pounds per hour

In Appendix A of the technical memorandum, TAP Analysis – Silo Filling, Table 1, the hourly emissions for phosphorous is listed as 5.56E-10 pounds per hour. There appears to be an error in the emissions listing for phosphorous. The following values should be used for phosphorous in Appendix A, TAP Analysis – Silo Filling, Table 1:

Controlled Emissions Factors – Silo Filling (lb/ton material): 2.36E-07
Emissions – Silo Filling (lb/hour): 4.72E-05
Annual Emissions – Silo Filling (ton/yr): 8.26E-05
Facility-Wide Total Hourly Emissions (lb/hr): 6.5E-04

The revised estimated facility-wide hourly phosphorous emissions are less than the screening level listed in IDAPA 58.01.01.585 of 7E-03 pounds per hour. The facility-wide hazardous air pollutant emissions are less than 10 tons per year.

Comment 3: The permittee requested a reference for the hourly emission factors used for nickel. Table 11.12-6 of AP-42 lists the uncontrolled emission factor for nickel during truck loading as 1.19E-05 pounds per ton material loaded. Assuming a control factor of 95%, the controlled emission factor is **5.95E-07 pounds per material loaded**. As discussed above, the maximum rated input of loading portland cement from storage silos to trucks is 300 tons per hour.

In Appendix A of the technical memorandum, TAP Analysis – Truck Loading, Table 2, the controlled emission factor for nickel is listed as 5.95E-06 pounds per material loaded. It appears that this value was used in error. The following values should be used for nickel in Appendix A, TAP Analysis – Truck Loading, Table 2:

Controlled Emissions Factors – Truck Loading (lb/ton material): 5.95E-07
Emissions – Truck Loading (lb/hour): 1.79E-04
Annual Emissions Truck Loading (ton/yr): 2.08E-04
Facility-Wide Total Hourly Emissions (lb/hr): 1.8E-04

Comment 7: The permittee requested the following change to Permit Condition 3.4 (text requested to be removed is struck through):

"The permittee shall operate and maintain the baghouse filter (EU-01) at all times that material is unloaded from railcars to the storage silos~~, and at all times material is stored in the storage silos~~."

The main source of emissions at the facility is unloading of railcars and loading of trucks. The emissions from the storage silos when loading or unloading is not occurring are assumed to be negligible. There are no emission factors listed in AP-42 for such "breathing losses". Not operating the baghouse filter during periods when no loading or unloading is occurring is not expected to cause an emissions increase.

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